UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/711,302	11/14/2000	Hong Jo Jeong	2950-0176P	6861

2292 7590 10/22/2003

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
CHU, KIM KWOK	

ART UNIT	PAPER NUMBER
2653	5

DATE MAILED: 10/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/711,302	JEONG ET AL.	
	Examiner	Art Unit	
	Kim-Kwok CHU	2653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Amendment filed on 7/23/03 (paper 4)* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6,8-11 and 13-18* is/are rejected.

7)☒ Claim(s) *7 and 12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 November 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Response to Remarks

1. Applicant's Remarks filed on July 23, 2003 (paper 4) have been fully considered but they are not persuasive.

(a) Applicant states that his invention "samples the focus error signal at constant intervals and sums the sample values to determine the presence of an optical disk" (page 15 of the Remarks, lines 1-3). Accordingly, an optical head's function such as sampling a signal at constant intervals is just another expression of the operation of an analog to digital converter in the head's signal processing circuit. A typical photodetector receives focus error signal which is sampled and then arithmetically summed to obtain a digital value which can be used to drive a focus servo mechanism such as Mizumoto's and Satoh's optical head;

(b) if there is no disk exist, there is no focus error signal received by Mizumoto's and Satoh's photodetector; and

(c) Applicant states that Satoh's operation has nothing to do with judging the existence of a disk (page 15, lines 3 and 4). Accordingly, Satoh teaches a method of judging the existence of a CD or a DVD disk (Fig. 7 of Satoh's 5,903,531 patent).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> *A person shall be entitled to a patent unless --*
> *(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

3. Claims 5, 6, 8, 9, 11, 14, 16 and 18 are rejected under 35 U.S.C. § 102(b) as being anticipated by Satoh et al. (U.S. Patent 5,903,531).

Satoh teaches a method for checking the existence of an optical disk having all of the steps as recited in claims 5, 6, 8, 9, 11, 14, 16 and 18. For example, Satoh teaches the following:

(a) as in claim 5, detecting a focus error signal (Fig. 3; column 4, lines 59-67);

(b) as in claim 5, the focus error signal is lower than a predetermined reference level during a predetermined period; (Figs. 3 and 7; step A3; column 9, line 18-20);

(c) as in claim 5, sampling the focus error signal at constant intervals and calculating the sampled values (Fig. 5; focus error signals are digital signals which are sampled from analog signals received from the photodetector 21);

(d) as in claim 5, judging the existence of an optical disk 11, depending upon the magnitude of detected value (Figs. 3 and 7; steps A3 and A4);

(e) as in claim 6, the detecting step is started when the focus error signal exceeds a predefined level while moving an optical pickup (Figs. 4 and 7; step A4);

(f) as in claim 8, in the judging step, an optical disk (CD) is judged to exist if the calculated value of the focus error signal is greater than a predefined value (Fig. 7; steps A3 and A4);

(g) as in claim 11, the calculating involves summing the sampled values (Fig. 5; focus error is a summing signal; the summing circuit 23 is an A/D conversion device so that detected analog signals is digitized and then summed); and

(h) as in claim 14, the detecting of focus error signal is performed if a focus OK is asserted (Fig. 3; inherent feature where servo control such as amplifier 27 and controller 100 set the focus position for the optical disk 11).

4. Claims 9, 16 and 18 have limitations similar to those treated in the above rejection, and is met by the reference as discussed above.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> *(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.*

6. Claims 1, 3, 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizumoto et al. (U.S. Patent 5,351,226) in view of Satoh et al. (U.S. Patent 5,903,531).

Mizumoto teaches a method for checking the existence of an optical disk very similar to that of the instant invention. For example, Mizumoto teaches the following steps:

(a) as in claim 1, checking whether a focus OK/locked signal is asserted while moving an optical pickup 2 (Figs. 5 and 6; step S2);

(b) as in claim 1, detecting of the a value of focus error if the focus OK signal is asserted (Fig. 5; step S2; focus servo

signal is generated after switch 1 is closed; column 5, lines 48-53);

(c) as in claim 1, judging the existence of an optical disk 1 depending upon a magnitude of the detected value of focus error (Figs. 5 and 6; step 2 determines the focus condition of the pull-in signal; column 6, lines 54-59); and

(d) as in claim 4, an optical disk 1 is judged to exist if the magnitude of the detected value is greater than a predefined reference level (Fig. 8; at t1, the pull-in signal has a certain predetermined magnitude so that the pull-in operation is effective).

However, Mizumoto does not teach the following:

(a) as in claim 1, the value of the focus error is obtained by sampling the focus error signal at constant intervals and calculating the sampled values;

(b) as in claims 3 and 10, the calculating is carried out on summing the sampled focus error which is greater than a predefined reference level.

Satoh teaches a method for checking the existence of an optical disk having a summing circuit 23 to obtain a focusing error signal (Figs, 3 and 5).

Signals output from a photodetector such as Mizumoto's requires some kind of arithmetic operations so that a focusing error signal can be obtained. For example, in Fig. 5, Satoh uses

a preamplifier device 23 as an arithmetic means. Hence, in order to calculate the focusing error signal, it would have been obvious to one of ordinary skill in the art at the time of invention to use a digital sampling means such as Satoh's amplifier 23 in Mizumoto's servo circuit 7 in order to sample and sum the signals detected from the photodetector, because Satoh's sampling means 23 provides digitized/sampled signals which can be summed in an arithmetic operation so that a focus error signal is produced.

Furthermore, although Satoh does not disclose the summing operation is carried out on sampled focus error greater than a predefined reference level, it is not novel because the predetermined reference level can be set to zero which means no signals are output from the photodetector. In other words, as long as there is a disk exist, the photodetector outputs detected signals, and then the summed circuit 23 generates a focus error signal.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mizumoto et al. (U.S. Patent 5,351,226) in view of Satoh et al. (U.S. Patent 5,903,531) and Wachi (U.S. Patent 5,138,595).

Mizumoto in view of Satoh teach a method for checking the existence of an optical disk very similar to that of the instant invention. However, both Mizumoto and Satoh do not teach the following:

(a) as in claim 13, the focus signal is asserted based on a result of comparing a beam strength signal and a reference signal.

Wachi teaches a focus error signal e based on a result of comparing a beam strength signal and a reference signal (Fig. 1; column 6, lines 4-6).

To control the proper amplitude of a servo signal for focusing a light beam such as Mizumoto's focus lock operation, a gain control means such as Wachi's amplifier 7 is required. Therefore, it would have been obvious to one of ordinary skill in the art to use a servo control means such as Wachi's in Mizumoto's light beam focus operation, because it controls the correct gain of the focus error signal so that it can be further processed without noise interference.

8. Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satoh et al. (U.S. Patent 5,903,531) in view of Wachi (U.S. Patent 5,138,595).

Satoh teach a method for checking the existence of an optical disk very similar to that of the instant invention. However, Satoh do not teach the following:

(a) as in claims 15 and 17, the focus signal is asserted based on a result of comparing a beam strength signal and a reference signal.

Wachi teaches a focus error signal e based on a result of comparing a beam strength signal and a reference signal (Fig. 1; column 6, lines 4-6).

To control the proper amplitude of a servo signal for focusing a light beam such as Satoh's focus operation, a gain control means such as Wachi's amplifier 7 is required. Therefore, it would have been obvious to one of ordinary skill in the art to use a servo control means such as Wachi's in Satoh's light beam focus operation, because it controls the correct gain of the focus error signal so that it can be further processed without noise interference.

Allowable Subject Matter

9. Claims 7 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

As in claim 7, the prior art of record fails to teach or fairly suggest a method of checking the existence of an optical disk where the predefined reference level includes:

(a) a first predefined reference level is for starting the detecting step; and

(b) a second predefined reference level is for detecting the focus error.

The features indicated above, in combination with the other elements of the claims, are not anticipated by, nor made obvious over, the prior art of record.

11. *Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).*

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks Washington, D.C. 20231 Or faxed to:

(703) 872-9306 (for formal communications intended for entry. Or:

(703) 746-6909, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim CHU whose telephone number is (703) 305-3032 between 9:30 am to 6:00 pm, Monday to Friday.

KC 10/16/03

Kim-Kwok CHU
Examiner AU2653
October 16, 2003

(703) 305-3032

WILLIAM KORZUCH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600